

Squirrel Postal Service

Time Limit	Memory Limit
1 second	512 MB

Statement

Lisa, the operations manager for the Squirrel Postal Service, needs your help!

The Squirrel Postal Service delivers items across the whole town, which can be described as N huts (numbered 1 through N) with $N - 1$ bidirectional roads connecting them, such that you can reach any hut from any other hut by travelling along one or more of the roads.

The Squirrel Postal Service has N deliveries today, each going to a different hut. A route is any sequence of huts such that each adjacent pair of huts in the sequence is connected by a road. As such, Lisa wants to find length of the shortest route that starts at the main depot (hut 1) and passes through every hut in town.

Can you help Lisa by outputting the number of huts in the shortest route starting at hut 1 and passing through all other huts?

Input

The first line contains the integer N .

The next $N - 1$ lines contain two integers each, representing a pair of huts connected by road.

Output

Output one integer, the number of huts in the shortest route as described in the Statement section.

Sample Input 1

```
6
1 3
1 6
4 3
2 5
3 2
```

Sample Output 1

```
8
```

Sample Input 2

```
5
5 1
1 2
2 3
3 4
```

Sample Output 2

```
6
```

Explanation

- For the first example, the shortest route is 1, 6, 1, 3, 4, 3, 2, 5.
- For the second example, the shortest route is 1, 5, 1, 2, 3, 4.

Constraints

- $1 \leq N \leq 10^5$

Subtasks

Number	Points	Other constraints
1	35	$N \leq 1000$
2	50	Each hut is connected to at most 2 other huts. That is, the town is a line.
3	15	No further constraints.